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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventors:	Dutta et al.	Attorney Docket:	OSU 1159-144
Serial No.:	09/903,916	Examiner:	Van T. Trieu
Filed:	July 12, 2001	Art Unit:	2636
Title:	CARBON MONOXIDE SENSOR AND METHOD OF USE		

VERIFIED STATEMENT (DECLARATION) UNDER 37 C.F.R. §1.132

I, Richard L. McCreery, hereby declare that I am over 21 years of age, of sound mind, capable of making this declaration, and fully competent to testify concerning the matters stated herein. I have personal knowledge of each of the matters stated herein. I am currently the Dow Professor of Chemistry at the Ohio State University. I received my B.S. in chemistry from the University of California, Riverside, in 1970, and my Ph.D. in chemistry under Ralph Adams at the University of Kansas in 1974.

I understand that the United States Patent and Trademark Office has rejected claims 6 and 7 of the above-referenced application on the basis of U.S. Pat. No. 6,311,545 to Tamaki et al., which issued on November 6, 2001, from an application filed March 11, 1999, which claims priority to Japanese App. No. 10-059430 filed March 11, 1998.

I have read the Tamaki reference and respectfully submit that the Tamaki reference is inoperable for producing the mixed solution used to form the copper oxide (CuO) sensitizer deposit as alleged at Column 8, lines 2 – 7. Column 8, lines 4 – 5 of Tamaki states that the device was immersed in a mixed solution of "0.05 mol/liter

aqueous CuCl, solution, a sensitizer"... at 30°C. Although Tamaki specifies that the copper chloride solution was CuCl, an aqueous CuCl solution cannot possibly have a concentration of 0.05 mol/liter as the solubility of CuCl is too low to produce that concentrated of an aqueous solution. The solubility of CuCl in water, in grams per 100cc, is 0.0062.[1] A saturated aqueous solution of CuCl would have a concentration of 6.263×10^{-4} moles/liter[2], which is much more dilute than the 0.05 mol/liter solution used by Tamaki. However, if the copper chloride used by Tamaki were actually $CuCl_2$, then the 0.05 mole/liter concentration is feasible, as a saturated aqueous solution of $CuCl_2$ has a concentration of 5.251 moles/liter [3] based upon $CuCl_2$'s solubility in water of 70.6 grams per 100cc. [4] Accordingly, one could not produce a 0.05 mol/liter aqueous solution of CuCl as CuCl is not soluble enough in water to reach that concentration. Therefore, the Tamaki reference is inoperable for producing a mixed solution comprising a 0.05 mol/liter cuprous chloride (CuCl) aqueous solution.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that the statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 10001 of Title 18 of the United States Code, and that such willful false statements made jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statement is directed.

Jan 27 2004
Date of Execution

R & Me Creery
Richard L. McCreery

[1] CRC Handbook of Chemistry and Physics 70th Edition on page B-88.
[2] (0.0062 gr/100 mL) x (1000 mL / 1 L) x (1 mol / 98.9987 gr) = 0.0006263 M.
[3] (70.6 gr /100 mL) x (1000 mL / 1 L) x (1 mol / 134.4514 gr) = 5.251 M.
[4] CRC Handbook of Chemistry and Physics 70th Edition on page B-88.